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PART II

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

DEPARTMENT OF AGRICULTURE

Forest Service

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GRAZING FEE TASK FORCE

Charter and Requests for Comments

DEPARTMENT OF AGRICULTURE

Forest Service

GRAZING FEE TASK FORCE

Charter and Requests for Comments

CROSS REFERENCE: For a document issued jointly by the Department of Agriculture's Forest Service and the Department of the Interior's Bureau of Land Management on the subject of Grazing Fee Task Force Charter, see FR Doc. 77-3310 appearing in Part II of this issue.

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

GRAZING FEE TASK FORCE

Charter and Request for Comments

Notice is hereby given that the Bureau of Land Management, Department of the Interior, and the Forest Service, Department of Agriculture, have jointly established a task force to study fees for grazing livestock on Federal lands the two agencies administer, and to prepare a report and recommenations. The purpose is to advise the public of the charter of the Grazing Fee Task Force and of the intent to request comments on grazing fees.

CHARTER OF GRAZING FEE TASK FORCE

In compliance with Section 401(a) of Pub. L. 94-579, a joint Bureau of Land Management and Forest Service Grazing Fee Task Force, will preare the "Report of the Secretaries" for submission to the Congress on or before October 21, 1977.

TASK FORCE STAFF

Co-chairman:
William L. Evans, Director of Range Management, Forest Service, Department of Agriculture.
Kay W. Wilkes, Chief, Division of Range, Bureau of Land Management, Department of the Interior.

Members:
Melvin D. Bellinger, Forst Service.
Ronald J. Younger, Bureau of Land Management.

Consultant:
Economic Research Service, Department of Agriculture.

STATEMENT OF AUTHORITY

Section 401(a) of the Federal Land Policy and Management Act of 1976 (Pub. L. 94-579), directs the Secretary of Agriculture and the Secretary of the Interior to jointly conduct a study to determine the value of grazing with a view to establishing a fee to be charged for livestock grazing which is equitable to the United States and to holders of grazing permits and leases. The Secretaries shall report to the Congress by October 21, 1977, the results of such study together with recommendations to implement a reasonable grazing fee schedule based on such study.

A letter dated December 29, 1976, and signed by the Assistant Secretary of the Interior and the Assistant Secretary of Agriculture, directed the Bureau of Land Management and the Forest Service to organize a Grazing Fee Task Force to prepare the "Report of the Secretaries."

The Economic Research Service, Department of Agriculture, will be a consultant to the Grazing Fee Task Force. Staff assigned by the Administrator of the Economic Research Service will participate in the collection and review of public comments and will provide advice on methodology, on evaluation of data, and on economic issues.

The task force co-chairmen are authorized to solicit assistance and advice from other sources as necessary.

STATEMENT OF ASSIGNMENT

The task force is assigned the responsibility for the accomplishment of all activities necessary to submit to the two Secretaries a grazing fee report, including recommendations, that will fulfill the requirements of Section 401(a) of the Federal Land Policy and Management Act. These activities include scheduling regional public meetings, obtaining necessary technical data, public release of the Technical Committee report, "Review of Public Land Grazing Fees," consultation with the Office of Management and Budget, and reporting back to the Assistant Secretary of the Interior for Land and Water Resources and the Assistant Secretary of Agriculture for Conservation, Research, and Education by August 1, 1977.

The Grazing Fee Task Force shall terminate not later than December 21, 1977.

The charter of the Grazing Fee Task Force is approved by:

Dated: January 28, 1977.

JOHN R. MCGUIRE,
Chief, Forest Service.

CURT BERKLUND,
Director, Bureau of Land Management.

REQUEST FOR COMMENTS

Pursuant to the charter, notice is given of intent to solicit suggestions, comments, statements, and recommendations from all parties interested in the establishment of fees for grazing livestock on the Federal lands in the western States administered by the Forest Service, Department of Agriculture, and the Bureau of Land Management, Department of the Interior. Any individual desiring to present data, suggestions, comments, and/or arguments orally may do so within available time limits at one of the scheduled meetings. Any interested person or organization may file a written statement with the task force at the scheduled meetings.

The Grazing Fee Task Force will consider comments regarding grazing fees on the following Federal lands:

1. Public lands administered by the Bureau of Land Management, Department of the Interior.

2. National Forest lands in the eleven contiguous western States administered by the Forest Service, Department of Agriculture.

3. National Forest lands in South Dakota and Nebraska administered by the Forest Service.

4. All National Grasslands administered by the Forest Service.

Interested persons may submit written comments on grazing fees on or before April 8, 1977. Written communications should be directed to the Grazing Fee Task Force, Range Management Staff, P.O. Box 2417, Washington, D.C. 20013, or presented at any one of the seven scheduled public meetings. All Comments received will be available for public inspection during regular business hours in Room 610, 1621 North Kent Street, Arlington, Virginia, or in Room 5558, Department of the Interior Building, 17th and D Street, Washington, D.C.

The public meetings are scheduled at the locations and dates listed below during the hours of 9:30 a.m., to 3:00 p.m.

Rapid City, S. Dak	Mar. 7, 1977
Missoula, Mont	Mar. 9, 1977
Boise, Idaho	Mar. 11, 1977
Reno, Nevada	Mar. 14, 1977
Denver, Colo	Mar. 16, 1977
Albuquerque, N. Mex	Mar. 18, 1977
Washington, D.C	Mar. 23, 1977

Further information about meeting locations may be obtained from the Bureau of Land Management or Forest Service offices in the cities listed above.

INFORMATION AVAILABLE

Special attention is directed to the following provisions of the Federal Land Policy and Management Act of 1976 (Pub. L. 94-579);

SECTION 102(a). The Congress declares that it is the policy of the United States that * * *

(9) The United States receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute;

SECTION 401(a). The Secretary of Agriculture and the Secretary of the Interior shall jointly cause to be conducted a study to determine the value of grazing on the lands under their jurisdiction in the eleven western States with a view to establishing a fee to be charged for domestic livestock grazing on such lands which is equitable to the United States and to the holders of grazing permits and leases on such lands. In making such study, the Secretaries shall take into consideration the costs of production normally associated with domestic livestock grazing in the eleven western States, differences in forage values, and such other factors as may relate to the reasonableness of such fees. The Secretaries shall report the result of such study to the Congress not later than one year from and after the date of approval of this Act, together with recommendations to implement a reasonable grazing fee schedule based upon such study. If the report required herein has not been submitted to the Congress within one year after the date of approval of this Act, the grazing fee charge then in effect shall not be altered and shall remain the same until such report has been submitted to the Congress. Neither Secretary shall increase the grazing fee in the 1977 grazing year.

REPORT: "REVIEW OF PUBLIC LAND GRAZING FEES"

The Technical Committee report, "Review of Public Land Grazing Fees" was submitted in November 1976, in fulfillment of the Memorandum of Understanding signed in July 1976 between the Bureau of Land Management, Forest Service, Economic Research Service, and Statistical Reporting Service. We believe the report will fulfill the study requirements of Section 401(a) of Pub. L. 94-579. The report is expected to be a primary document used by the Grazing Fee Task Force and is being published here for the convenience of interested individuals and/or organizations that may desire to submit written comments regarding the "Review of Public Land Grazing Fees." The publication of the "Review of Public Land Grazing Fees" does not constitute approval of the report's recommendations by the Secretary of the Interior or Secretary of Agricul-

ture. Issued in Washington, D.C., January 27, 1977, by the Chief, Forest Service and Director, Bureau of Land Management.

Dated: January 28, 1977.

JOHN R. MCGUIRE,
Chief, Forest Service.

CURT BERKLUND,
Director, Bureau of Land Management.

REVIEW OF PUBLIC LAND GRAZING FEES: NOVEMBER 15, 1976

A report prepared by the Technical Committee organized to review public land grazing fees, Department of the Interior, Bureau of Land Management, and Department of Agriculture, Economic Research Service, Statistical Reporting Service and the Forest Service.

REVIEW OF PUBLIC LAND GRAZING FEES: NOVEMBER 15, 1976

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TECHNICAL COMMITTEE MEMBERS

Dr. John Trierweiler, Chairman; Economic Research Service, USDA.
Melvin D. Bellinger; Forest Service, USDA.
James L. Olsen; Statistical Reporting Service, USDA.
Ronald J. Younger; Bureau of Land Management, USDI.

SUMMARY

The Technical Committee to Review Public Land Grazing Fees was formed by a Memorandum of Understanding on July 12, 1976 between ERS, USDA; SRS, USDA; FS, USDA; and BLM, USDI. The committee was formed to prepare a report on "Public Land Grazing Fees." The specific tasks of the Technical Committee were:

A. To examine the present procedures for establishing grazing fees.

B. To examine the several alternatives which have been proposed as replacement or modification for all or portions of present procedure.

C. Identify available or additional secondary data which might enhance the present or alternatives procedures for determining fees.

The review was conducted within existing administrative mandates that a fair market value fee must be collected and that permit value would not be considered a valid cost factor for determining public land grazing fees.

In order that the review be helpful in resolving, or reducing the controversy about grazing fees, two meetings were held so that the various interest groups could present their views on the public land grazing fee issue, suggested alternatives, and factors to be considered and/or clarified.

Evaluation of the existing system of fee determination or the suggested alternatives requires a criteria for comparison. Although there is no obvious way to determine what is "fair," it can be shown that the competitive norm satisfies the conditions of a welfare ideal. Few economists would claim that pure competition does or ever has existed, but it does provide a logical starting place for evaluation of great many economic problems. The competitive norm incorporates the efficiency concept of equimarginal resource returns, where the value of a resource is determined by its value in use.

The 1969 system (the method used during the 1969–1976 period for grazing fee determination by the BLM and FS) includes three major elements. The first is the economic model and data collection survey used to establish the fair market value fee level of 1966. Second is the ten-year adjustment of grazing fees from previous levels to the fair market value level. Third, the procedure used to make annual adjustments in the fair market value. Nearly all of the controversy surrounding the grazing fees issue is with the adjustment factor. The procedure involves adjusting the 1966 base fee of $1.23 to current values by the Index of Private Land Lease Rates in the eleven Western States for dry land range.

A number of alternatives have been suggested by various groups to update or adjust the base fair market value fee of $1.23. Although each proposal is different they all bear the same basic concept, and that is adjustments should be made by changes in the price of output relative to changes in the price of inputs. The formula most often suggested was a Beef Price Index minus a Cost of Production Index. Other suggestions include arbitrary constraints on yearly adjustments or the use of moving averages.

A major concern at the external meetings was the quality of the data used to compute the Index on Private Land Lease Rates. There was also concern about the components of cost that were included in the Prices Paid Index (to be used as Cost of Production Index) as well as a redundancy between the Beef Price Index and the Prices Paid Index. The committee suggested that data on private land lease rates could be improved if it were collected on probability list frame sample that included only livestock operators instead of on a general Farm Report questionnaire. New questions were also suggested for the data collected. The Prices Paid Index could be improved by eliminating a number of cost items not relevant to western range livestock production. The redundancy in the Beef Price Index could be eliminated by excluding calves.

With a history of a market economy for all other products and resources used in agriculture, the obvious solution would be a competitive bidding system for the use of the public range. However, tenure arrangements, institutional goals, management restriction, and location of grazing lands has effectively eliminated the competitive requirement. Therefore less efficient administered pricing schemes must be developed. The task of the Technical Committee then became one of recommending the proper "proxi" for the competitive bid.

Adjusting grazing fees using the Index of Private Land Lease Rates (current method) may best be described as the comparative market approach. It is based on the premise that an individual will not pay more for the use of a resource than his next best alternative, or conversely, the owner of a resource should receive a value equivalent to that which could be realized from the next best alternative use of that resource. The committee felt that the index was a good indicator of long term adjustments taking place in western range livestock industry. It duplicates economic adjustments in the competitive sector, and is the only alternative suggested or discussed that incorporates measures of technical efficiency. Improvements made in the data collection process and discussed in the previous section should eliminate concern about the relevancy and accuracy of the data. However, the Technical Committee was concerned about the ability of the index to reflect short-run instabilities that result during periods of demand, supply and price disequilibrium. In the past this index has failed to account for short-run instabilities.

The combined index (Beef Price Index minus the Prices Paid Index) was rejected by the committee as the only adjustment factor in the grazing fee formula because it does not respond to long-run adjustments in resource use or efficiency, and would result in a declining real rent over time. However, it was felt that the combined index did reflect short-run instabilities in the value of the range resource.

Recognizing the strengths and the weakness of the current formula as well as the alternative formulas, the Technical Committee recommended the following formula for determining grazing fees levels on public lands:

$$\text{FMV Fee/AUM} = \$1.23\left(\frac{L+P}{100}\right)$$

L=The improved Index of Private Land Lease Rates.

P=The reconstructed Index of Beef Prices minus the Prices Paid Index (selected items only).

This formula is recommended in the light that it provides for a consistent and efficient method of pricing the public grazing resources. The long-run trend is based on the value of the alternative resource while at the same time accounting for short-run instabilities in either livestock prices or input prices. The committee has further recommended an improvement in the data collection procedures on the private land lease rates. Some modification was also suggested for the Prices Paid Index to make it more accurately reflect western range livestock operations.

NOVEMBER 15, 1976.

I. Introduction

The Technical Committee to Review Public Land Grazing Fees was formed by a Memorandum of July 12, 1976, in response to the request of Subcommittee on Environment and Land Resources, Committee on Interior and Insular Affairs, United States Senate, at the April 30, 1976 Committee Hearing on S. 3071. This report of the Technical Committee is transmitted to the Assistant Secretary for Conservation, Research and Education, U.S. Department of Agriculture; Assistant Secretary, Land and Water Resources, U.S. Department of the Interior; and Director of Agricultural Economics, U.S. Department of Agriculture.

The purpose of the review is to reconsider and examine the present 8-year-old formula for determining grazing fees in light of the criticism directed at it and the alternatives proposed.

The review by the Technical Committee:

A. Examines the present procedures for establishing grazing fees in light of recent criticism, and in light of its fulfillment of expectations in 1968–69.

B. Examines the several alternatives which have been proposed as replacement or modification for all or a portion of present procedures.

C. Identifies available or additional secondary data which might enhance the present or alternative procedures for determining fees.

The Analysis by the Technical Committee:

A. Determines the validity of various fee procedure proposals relative to the existing system and the existing Administration mandates.

B. Indicates combinations of data or procedures which are compatible with existing Administration mandates.

C. Indicates the ranking of the several proposals based on economic criteria.

D. Indicates useable data in modification of existing procedures.

E. Provides the basis for decision within the Administration on further action regarding fees.

II. Limit of Scope

The review was conducted within existing administration mandates that a fair market value fee must be collected (BOB, Circular No. A–25) and permit value would not be considered a valid cost factor for determining public land grazing fees. The collection of new primary data was not to be included in the study. However, the need for new studies and/or collection of primary data could be a conclusion of the review. The review and analysis was limited to a search of and use of available secondary data. New tabulation of existing data, new indexes, improved methods of collection of data for existing data series, or new use of existing data were considered.

EXTERNAL CONSULTATIONS

In order for this review to be helpful in resolving, or reducing the controversy about grazing fees, it must serve to increase general understanding as well as meet technical criteria. The livestock industry, through the American National Cattlemen's Association and the Public Lands Council, was fully informed and involved in defining the nature and extent of this Review of Grazing Fees. The appropriate professionals of the Western universities were informed and involved. The environmental concerns were kept appraised through the National Wildlife Federation and the Wildlife Management Institute.

A meeting was held in Denver, Colorado on August 25, 1976. A second meeting was held in Washington, D.C. on September 20, 1976. At both meetings participants from the above listed interest groups presented their views on the public land grazing fee issue.

III. Criteria for Determining Fair Market Value of Public Grazing

An expression currently in vogue with younger people goes "whatever is fair", or a slightly different expression, "fair is fair". Like many slang expressions it does not have a precise dictionary definition, but its use connotation translates roughly "if you are satisfied, I'm satisfied". In short, "fair" expresses mutual satisfaction between parties involved. The key word is mutual. Fair also suggests justice or equity.

Economists have found no obvious way to determine what is "fair". Welfare comparisons would be relatively simple if it were possible to aggregate the utilities of individuals into a single utility function. However welfare comparisons of individual utilities are possible only in a very restricted sense. It is reasonable to postulate that social welfare transcends the more restricted notion of economic welfare, but for obvious reasons this analysis will be restricted to the latter.

Economic efficiency, often called Pareto optimality, states that the distribution of consumer goods and productive inputs are optimal if any feasible reallocation of goods or inputs causes a reduction in the satisfaction or output of any individual or firm. It can be shown that a perfectly competitive equilibrium satisfies these conditions, and thus perfect competition is a welfare ideal in this sense. Efficiency in the consuming and producing sectors implies further that the allocation of resources is pareto-optimal throughout the economy.[1]

A difficulty with the concept of economic efficiency or Pareto optimality as a welfare criteria is that it accepts the prevailing income distribution, i.e. return to resources. It is conceivable that the norm of perfect competition could lead to a condition in which the majority of individuals lived at subsistence or below. The analysis of welfare in terms of perfect competition leaves a considerable amount of indeterminancy in the solution. This indeterminancy results from the acceptance of the criteria that an increase in welfare was unambiguously defined as an increase in one individuals position without being accompanied by a deterioration in the position of another. This indeterminancy can only be removed by further value judgments.

AN ECONOMIC NORM

The above discussion stresses the inability of economic analysis to handle a welfare criterion outside of the norm of economic efficiency. To do otherwise would require value judgments or ethical considerations outside the subject of economic analysis.

Few economists would claim that pure competition does or has ever existed in the United States economy. However, pure competition provides a logical starting place if one is to understand imperfect competition. Further it has been shown that a considerable amount of competition does exist, particularly in agriculture, and that the theory of pure competition gives valid answers to a great many economic problems.[2] Lastly the pure competition model provides a norm or ideal from which to appraise the workings of the economic system. In the latter sense it is often used for regulation of imperfectly structured sectors of the economy, such as public utilities, as well as many other public policy measures.

The term competition is used rather ambiguously in economic literature as well as in ordinary conversation. To many people the term commonly denotes rivalry. Whereas, when used along with the term pure or perfect, it takes on a different meaning. From the illustration and previous discussion competition implies mutual satisfaction, fair market value, and efficient resource allocation.

RESOURCE PRICING UNDER PURE COMPETITION

Pure competition in the resource market implies a number of conditions: One, no single firm controls enough of any given resource to be able to influence its price; two, no one supplier of a resource can place enough on the market to influence its price; and three, resources are mobile and can move between different uses and its prices are flexible.

How, then, are resources valued in production? Let us look at the simultaneously pricing and output of decisions involved in the use of a variable resource in the organization of production. Suppose two ranchers living in the same community, one with an excess of summer forage, the other badly in need of more summer forage. Further they know of each others problem. Rancher Tom, who needs more forage, goes to rancher Ray to see about renting some of his summer pasture.

"Ray", says Tom, "would you consider renting me some pasture for the summer, I need some grazing for one of my cows? I'd pay you $60 for the privilege."

Ray thinking to himself that the extra grass is only worth about $5 if he used it replies, "sure Tom glad to help out."

[1] For a more theoretical approach see: Henderson, J. M. and Quandt, R. E. Microeconomic Theory, McGraw-Hill Book Company, 1968, Chapter 7, pages 203–207.

[2] The assumptions of pure and perfect competition are given in most introductory texts in Economics and will not be elaborated on at this time.

Tom was willing to pay $60 for the privilege while Ray figured it was only worth $5 in its existing use. Both men were satisfied and felt that a "fair" deal had been reached.

The bargaining is not over yet though. Ray having rented up a unit of summer grazing found he didn't have such an excess of pasture anymore. Tom's problem on the other hand was not so urgent anymore, as he didn't find himself in the same need for summer pasture. An additional unit of summer pasture is now only worth $40 to Tom. Trading of grazing privilege for rent would continue between Tom and Ray until eventually the forage was of equal value to both ranchers. In other words, the last unit traded would have equal marginal value to both Tom and Ray in production. Thus, a mutually advantageous trading situation had been achieved, and maximum efficiency had been attained by both. No further trading of grazing privileges would be advantageous to either party. The equimarginal principle has been achieved.

In a free competitive market for forage, both Tom and Ray would trade grazing privileges for cash rent until a "fair" market value had been reached by both parties. In addition, an efficient allocation of resource would have resulted. Generalizing from this simple illustration it may be said that the principle of equimarginal value in use asserts that an efficient allocation of forage has been attained when no mutually advantageous exchanges are possible between any pair of claimants.

Theoretically, the manager combines his resources such that the marginal value product or each resource is equal to the marginal value product of all other resources used in production. The attempt is to combine all of his resources (e.g. land, labor, capital) in such a manner that the productive values of the last unit of each resource added are all equal. To maximize profit, the manager organizes resources such that the marginal value product of each resource is equal to each other and to the marginal revenue received from the last unit of output. This procedure is called the equimarginal principle and can be defined by a simple formula:

$$(1) \qquad MVP_a = MVP_b = MVP_c = MC_x = MR_x = P_x$$

where:
MVP_i=marginal value product of the ith resource in production.
MC_x=sum of the marginal value products of the ith resources combined to produce output x, or the equivalent of marginal costs of production of the $x_{(th)}$ output.
MR_x=marginal revenue of the last unit of output x.
P_x=market price of output x.

In a competitively structured society the organization of production is determined by the principle forces of supply and demand. This basic framework along with the decisions of the human agents involved and tempered by the intensities created by time, form, and place lead to a reasonably efficient duality of resource pricing and allocation. This has been particularly true in agriculture because of the absence of barriers to entry (except high capital requirements), homogenity of the product between firms of like output, agriculture's atomistic structure, and the relative mobility of resources both into and out of agriculture. A large number of research studies have verified the long-run efficiency of agriculture.

THE REAL WORLD

The discussion to this point has considered only the "ideal" resource pricing and allocation system. Economic efficiency and the assumptions of a competitive system were discussed, as well as reference to U.S. agriculture industry generally conforming to these standards. Theoretically agriculture should be efficiently organized, at least in the long-run adjustments period, and few people familiar with U.S. agricultural production would argue its resource and technological efficiency.

However, production levels, resource allocation and pricing has not been so efficient in the short-run adjustment period for many sectors in agriculture. Animal production, and in particular the primary production level for both beef and lamb have demonstrated relatively inefficient production adjustments in the short-run when measured against the neoclassical model which was described as the "ideal" system.

Twenty years ago Glen Johnson and others postulated the theory of fixed assets, where a fixed asset is defined as one for which the marginal value productivity of a resource in its present use neither justified acquisition of more of it, or its disposition. Acquisition cost is what a farm or ranch operator would have to pay in order to acquire more of a particular productive asset. Salvage value is what the operation would get for the asset if it were sold rather than used in production. Neoclassical theory, which defines the equimarginal principle, assumes that markets are such that a manager can purchase more of an asset if it were profitable and that he can dispose of unwanted quantities at the same price. This is tantamount to saying that a firm will continue to produce in the short-run as long as it realizes a return on its variable resources, or stated differently, a firm in the very short-run can survive with no return to its most fixed assets if its cash flow is adequate to cover variable expenses. However, the difference between the theory of fixed assets and neoclassical theory is that resources usually considered variable in production actually become fixed in their present use. For example, labor and capital are normally considered variable resources. However, at primary production levels these variable inputs actually become fixed to the firm because their alternative use outside of production can temporarily drop as far as zero. The value in use that would be expected to accrue to these resources is often used by managers to bid up the use value (returns) of resources that have continued to remain variable. In the theory of fixed assets Johnson has pinpointed the reason for extremely inelastic or irreversible supply functions during periods of decreasing marginal revenue.[3]

Let us examine some of the components of argiculture and in particular the primary production level of livestock that lead to this type of behavior during periods of decreasing product price levels.

First, the combination of resources used in the production process are not discrete, but a bundle or package of resources. Marginal changes in revenue may not cause an adjustment in output levels or resource use because the bundle of resources cannot easily be separated. For example, the physical amount of labor available to the operator may be fixed over a rather large range of production, but the use value of the labor is variable. The balance between summer and winter forage may be unalterable at least in the short-run. If a shortage of summer pasture should occur the firm may be forced to bid up the value of this resource while simultaneously taking smaller returns on the remaining resources in the bundle, even in the face of decreasing marginal revenue for their product.

Second, variable resources become fixed because of the length of the production process. The primary reason for this is the time required for the biological process for plant and animal production. It may take two or more years from the time a market stimulus is received at the primary production level until actual output adjustments can be achieved. Time requirements for an increase in production can take three years or more for obvious reasons. The time aspects alone could cause inelastic short-run adjustment in resource use and output levels.

Third, the demand curve faced by the firm is perfectly elastic while that of the industry is inelastic. Individual firms fail to adjust output levels in the short-run, because of the atomistic structure of the industry.

Fourth, the duality aspect of the price system may work imperfectly. The role of price as a mechanism of trade is generally regarded as extremely efficient; However, the role of price as an organizer of production generally lacks the same performance standard. The problem may be that the human agent may be unable to bridge the gap from present product prices to expected price levels in the future. This lack of adjustment is

[3] The concept of asset fixity is well documented in the following list of publications:
a. The Overproduction Trap In U.S. Agriculture, Glen L. Johnson and C. Leroy Quance, Resources for the Future, John Hopkin Press, 1972.
b. Glen L. Johnson and Lowell S. Hardin, "Economics of Forage Evaluation", Station Bulletin 623 (Lafayette: Purdue Univ. Agricultural Exp. Station, Apr 55).
c. Clark Edwards, "Resource fixity and Farm Organization"; Journal of Farm Economics, 41, Nov 1959).
d. G. L. Johnson, "Supply Function—Some Facts and Notions", Agriculture Adjustment Problems in a Growing Economy, (Ames, Iowa State College Press, 1958) p. 78.

closely related to length of the production process.

In summary, this discussion has pointed out some of the reasons the competitive or "ideal" system leads to short-run imperfections regarding resource valuation at the primary production levels of agriculture. The principle reason cited was the concept of the fixity of assets. While the competitive norm accurately values resources in the long-run, it has some shortcomings in the short-run adjustment period. Short-run instabilities have a significant effect on the value of resources used in production. In the case of administered prices, failure to recognize potential imperfections in the price norm results in windfall gains and losses. During periods of increasing marginal revenue the government would fail to receive full fair market value for its range resources. Conversely during periods of decreasing marginal revenues the government may charge in excess of fair market value for the range resource. The equimarginal principle states that the value of a resource is determined by its value in use.

IV. Conditions, Assumptions and Issues

The Committee uses the concept of an animal-unit-month (AUM) throughout the report. An AUM is the amount of forage consumed by a cow-calf unit during one month. Other livestock are converted to the AUM equivalent. However, the concept is extended to recognize that with the forage the consuming animal unit also has use of a habitat, a place to live. This habitat includes the forage, watering facilities, fencing and other improvements necessary to make the range usable by livestock and to provide for control of the livestock.

INSTITUTIONAL GOALS

It is the objective of the Forest Service and BLM to contribute to the economic stability of individual ranch units to the fullest extent possible and consistent with protection of the resource and its long term productivity. This has resulted in establishment of policies which allocated grazing privileges based on:

A. Prior use;

B. Dependency, or the need for forage to round out a yearlong livestock enterprise;

C. Commensurability, the ability to carry livestock on home ranch lands during the time they were not on public lands; and

D. 10-year, renewable grazing privileges.

The effect of these actions is to maintain long term availability and use of public land associated with a given ranch unit. These provisions allow the operator to plan long-term enterprise development and investment.

COMMUNITY STABILITY

Grazing of livestock, under permit, on the Public Lands has a substantial impact on the rural communities associated with that grazing. The greater the percentage of land held in Federal ownership, the more the area or communities' basic economic activity relies on use of Federal land, and the greater the impact of Federal policies on the total economic activity and stability of those rural communities.

CONSERVATION AND ECONOMIC EFFICIENCY OF RESOURCE USE

Direct involvement in the development and long term use of land resources is generally considered to provide incentives for protection and economic development of the resource. Essentially, security of tenure provides the ability to plan ahead for a reasonable length of time with some degree of certainty.

RELATIONSHIP OF FEES TO TOTAL COMPLEX OF USES OF PUBLIC LANDS

Commercial enterprises using the public lands all pay fees which are intended to be the equivalent of fair market value. The only users exempt from payment of fair market value are those involved in individual or group activities primarily for personal enjoyment.

ADJUSTMENTS IN COST STRUCTURE NEEDED TO REFLECT GOVERNMENT REQUIREMENTS AND ENVIRONMENTAL ADJUSTMENT

It is claimed that there has been relative changes in the FS/BLM non-fee grazing cost over the private land leasing costs over the past eight years. The three most cited examples of increased cost to the rancher grazing on public lands are:

(1) Increased animal (sheep) losses because of restricted coyote control on public lands,

(2) Agency requirements for increased rancher participation in structure maintenance, and

(3) Agency requirement for increased participation of ranchers in grazing management practices.

If these claims were in fact true, then the next logical step would be to determine the magnitude of the cost change and make the corresponding corrections in the non-fee grazing cost which would increase combined federal grazing cost and reduce the base fair market value of $1.23 per AUM.

The fundamental basis for the claim of increase sheep losses due to predatation is the restrictions placed on some coyote control practices on public lands. While some individual rancher losses may have increased, there are no substantive data to quantify the claim. Also, the non-fee public grazing costs are weighted by corresponding AUM's for sheep and cattle and any increase in sheep cost would have liimted effect on the weighted average.

The Federal agency policy for rancher participation in maintenance of livestock facilities has not changed. There has however been an increase in the application of the maintenance policy in some range areas that previously were not fully affected by maintenance requirements. In recent years it has been BLM policy not to encourage the rancher to construct facilities on public lands because of possible multiple use management conflicts. Again, there are no quantifying data to support the contention that relative changes have taken place in the over-all project maintenance and depreciation costs between private and Federal grazing lands.

The third item relates to increased emphasis placed on intensive grazing management of rangelands and usually associated with some "system" of grazing control. These grazing systems or management plans usually require the movement of livestock several times during the grazing season between pastures to insure that multiple use objectives are met and the physiological needs of the desirable vegetation are taken care of. While some increased operating cost may be incurred there are direct compensating benefits to the rancher of increased stocking rate stability, decreased livestock conflicts with wildlife habitat requirements, improved range conditions and usually increased animal production. Increasing numbers of ranchers are leading the way in intensifying grazing management efforts on private lands so the condition is not unique to public lands. The costs and benefits to the public land user resulting from intensive management can not be identified in this review.

V. Existing and Suggested Alternatives For Fee Determination

The 1969 fee system (the current method used for grazing fee determination by the BLM and the FS) includes three major elements. The first is the economic model and data collection survey used to establish the fair market value fee level of 1966. Second is the ten year adjustment of grazing fees from previous levels to the fair market value level. Third, the procedure used to make annual adjustments in the fair market value.

THE ECONOMIC MODEL AND GRAZING SURVEY OF 1966

The economic model was designed to measure the value of grazing on public lands through a detailed comparison of grazing costs on public and privately owned leased lands. The model is based on the premise that the total on-the-range costs of grazing on public lands and on private owned leased lands should be equal and would represent a means for determining fair market value of public grazing. The public grazing fee would be the amount necessary to equalize the private land lease plus the on-range-cost of using the public lands.[4] In other words the public grazing fee would equal the private lease rate minus the difference in costs incurred in using public range versus private range.

The economic model, because it required only data from operating livestock

[4] Specific items compared for differences in the cost of grazing on public lands compared to private lands include: Lost animals, Association fee, veterinary, moving livestock to and from allotment, herding, salt and feed, personal travel to and from allotment, water, horse, fence maintenance, water maintenance, development, depreciation, other costs, and private lease rate.

production units eliminated most of the influence of non-livestock grazing related values, and only measured the level of total costs operators were willing to incur in leasing privately owned land for grazing purposes. The model specifically measures the different and varying requirements placed on the leasee or permittee by both the private and Government landowner. The model measured the value of contributions required by either landowner, including the requirement for construction, repair, replacement and maintenance of permanent improvements.

The data for use in the model were collected by the Statistical Reporting Service in 1966. Ten thousand (10,000) individuals were interviewed and over 14,000 questionnaires were completed. Interviewees included Forest Service and BLM grazing permittees, ranchers who leased private land, and lending institutions.

The data were analyzed by a Technical Committee composed of representatives of the Statistical Reporting Service, Economic Research Service, Forest Service, Bureau of Land Management, and the Bureau of the Budget (now Office of Management and Budget). The Technical Committee came to the following conclusions: first, the data did not provide a basis for differential feees between Forest Service and BLM. The data could be combined and single fee established for BLM and Forest Service grazing; two, the data did not provide a basis for establishing separate fees for cattle and sheep; three, the data and analysis provided a basis for a public land grazing fee of $1.23 per animal unit month.

The conclusion of the Technical Committee provided the basis for the establishment of $1.23 per AUM as the fair market value grazing fee level for 1966 on public lands in the West.

Ten Year Adjustment Period

In order to minimize the impact of adjusting from BLM's 33 cent fee in 1966, and Forest Service's average fee of 51 cents, a 10-year schedule was developed for adjusting to the $1.23 fee level. By spreading the increase in fees over a period of time, the initial impact of the fee increase on the permittees would be minimized and allow a normal adjustment to this increase. The Forest Service starting in 1969 would add 7.2 cents to the fee charged in 1966 for each of the next ten years. BLM would add nine cents to the fee charged in 1966 for each of the next ten years. The result would be that by 1978 both FS and BLM would be at the 1966 fair market value figure of $1.23.

Adjustments in Fair Market Value

Adjustments to the fair market value level of $1.23/AUM in 1966 were necessary to reflect changes overtime in the profitability of range livestock production and prevent future inequities between federal grazing fees and the value of the range forage for grazing use. The base fee was adjusted annually with an index of private grazing land lease rates for the 11 Western states. The private grazing land lease rate is the charge per head per month for pasturing cattle on privately owned lands. The actual values are converted to an index (1964–68=100) in order to measure the rate of change in this price series. The index is then applied to the 1966 base of $1.23.

The private land-lease rate was selected for the adjustment factor because: one, it was an existing and available data series; and two, it represented changes in the economic value of grazing use. It is representative of the economic value of grazing because it is established by the amounts livestock producers are willing to offer for the use of available private grazing lands. Given these conditions, it is expected that these offers represent the value of grazing to the livestock producers.[5]

Alternative Fee Systems

A number of alternatives have been suggested by various groups to update or adjust the base fair market value fee of $1.23. Although each proposal is different they all have the same basic concept. This concept is that adjustments in the base value ($1.23) should be related to changes in the price of the product and to changes in the price of inputs. The procedure intends that when the change in value (price) of products (beef cattle) is larger than changes in price of inputs (cost of production), then fees should increase. If the change in costs exceeds the change in product value, then the fee should decrease.

(BPI–PPI+100=CI)

This formula would replace the private land-lease rate formula for the necessary update adjustments for the 1966 base, and for lack of a better name is called the Combined Index. In this formula BPI is an index of the weighted average annual prices for beef cattle, excluding calves, for the 11 Western States. The base would be 1964–68=100. The Prices Paid Index (PPI) is an index of prices paid by farmers for commodities and srevices, interest, taxes and farm wages as collected and published by the Statistical Reporting Service, in "Agricultural Prices." The index would be adjusted to the base of 1964–68=100.

Another suggested alternative using the Combined Index as a replacement for the private land-lease rate would be that the data would represent a simple moving average. This would have the effect of reducing the impact of large yearly variations in the level of grazing fees.

A third suggested alternative would be to add the combined index to the currently used index of private land lease rates. In this formula, when divided by two, fifty percent of the change in the lease fair market value ($1.23) would result from the private land-lease rate index and fifty percent from the combined index.

[5] See Appendix Table 1 and 2 for charges resulting from the 1969 Fee System and the Source of Fee Increases.

Santini Formula

This set of alternatives uses the combined index, but also replaces the $1.23 base for fair market value in 1966 with other value(s) for 1975. The Santini formula would establish two groups of grazing lands based on carrying capacity of the public lands. The constant or base figure for Group I lands is $1.70 and for Group II lands $1.40 per animal unit month (AUM).

A version of the above, called the Modified Santini Formula, would make adjustments using the combined index, but the base would be $1.51, the average grazing fee charged in 1976 by BLM and FS.

The Hansen formula, which was contained in S. 3071, is the same as the Santini Formula except the Beef Price Index would be computed using prices for the 48 states and the PPI and the BPI would be a moving three-year simple average.

Economic Relief Formula

The economic relief formula (so named for lack of an alternative) uses the current formula based on $1.23 and the private land-lease rate index, with a separate analysis of the PPI and BPI or some similar indices, to trigger needed adjustments in the current fee due to stress economic condtions as indicated by the BPI and PPI analysis.

A number of other alternatives have been suggested to limit the impact of large changes in economic conditions. One suggestion was to limit the amount of increase that could occur in any period by a fixed percentage. Another suggestion was to incorporate a rolling three-year average into the existing formula.

Discussion

Most all of the alternatives proposed have merit, and suggest the interest and responsibility of users of and those interested in the use of the public lands. All of the alternatives proposed including the current system have advantages and disadvantages. In other words, there is no perfect lease arrangement, but only better or worse arrangements. This may explain the large variability of lease arrangements in effect around the country between landlord and leasee. Logic and reasonableness does, however, provide a basis for reducing, if not eliminating, conflict between interested parties. The task of this technical committee is to consider the alternatives in light of the economic criteria and recommend a method for determining a fair market value.

VII. Data Sources

A primary objective of this committee was to identify existing data sources, and/or refinements to existing data sources, and/or additional data that might be collected to enhance the present or alternative procedures for determining grazing fees.

A major concern at the external group meetings was the quality of the data

that are used to compute the index on private land lease rates. There was also concern about the components of cost that were included in the prices paid index, as well as a possible redundancy in the beef price index and the prices paid index.

PRIVATE LAND LEASE RATES

The Statistical Reporting Service, USDA currently obtains information on the average rate for pasturing cattle on non-irrigated privately owned land on a per head per month basis. The survey is a nonprobability survey; data is collected in March each year on a general Farm Report questionnaire. The table below indicates the number of responses to the question on pasturing cattle on privately owned non-irrigated pasture land for 11 Western states for the years 1967–75.

TABLE I.—*Number of responses by State by year to question on pasturing cattle on privately owned nonirrigated pasture land*

State	Year								
	1967	1968	1969	1970	1971	1972	1973	1974	1975
Montana	242	148	196	229	151	168	180	104	159
Idaho	133	73	104	88	85	89	69	57	77
Wyoming	72	56	50	44	45	29	28	81	64
Colorado	219	177	----	----	229	213	242	260	218
New Mexico	76	65	34	39	39	36	49	31	39
Arizona	17	14	17	15	10	15	10	7	4
Utah	80	71	85	104	95	120	84	77	90
Nevada	----	19	----	17	11	8	8	8	9
Washington	176	132	132	128	115	81	104	66	97
Oregon	198	142	158	143	72	72	120	67	89
California	138	95	98	132	148	130	125	63	119
Total	1,351	992	874	939	1,000	961	1,019	821	965

The SRS Farm Report Questionnaire is mailed to a non-probability general purpose list, including grain farmers, dairy farmers, fruit farmers, etc. In the 11 Western States, approximately 12,500 questionnaires are mailed in March. The question on pasturing cattle on privately owned non-irrigated land is summarized and provided to the Economic Research Service, USDA for analysis and publication. Forest Service, USDA and Bureau of Land Management, U.S. Department of Interior, use these data in adjusting the range forage index each year based on an average head-month rental of $3.65 for the 1964–68 period equal to 100. The adjusted RFI for each year is the 11-State average head-month rental for that year divided by the $3.65 AUM average.

DATA IMPROVEMENT

The Statistical Reporting Service currently has operational two mid-year probability surveys in the 11 Western States. One of the mid-year surveys is a cattle multiple frame survey that utilizes a list frame with a non-response follow-up. The second probability survey, known as the June Enumerative Survey, consists of land areas and identifies operations not covered by the list frame. About 10,800 multiple frame questionnaires were tabulated in nine Western States in 1975. In addition, the June Enumerative Survey, a probability area frame survey, which is conducted in the other two Western States, had approximately 1,700 survey questionnaires completed last year. If it is desirable to have the adjustment factor for the Range Fee Index to be on a probability basis, the vehicle is available to provide this type information. Questions that would be added to the mid-year survey are as follows:

All Non-irrigated Grazing or Pasture Lands.

1. Average rate for pasturing cattle on privately owned land in this area this year per head per month ----------

2. Do you personally rent privately owned non-irrigated pasture on:

(a) A per head per month basis? ----------

(b) A per acre bases? ----------

3. If yes, how many head of cattle are you pasturing this year on the privately owned non-irrigated pasture? ----------

4. How many days will you have these cattle on the rented pasture? ----------

5. Total rent paid for pasturing these cattle on privately owned pasture this year -------

The cost of adding these questions to the two surveys would be $20,000.

INDEX OF PRICES PAID BY FARMERS

The Index of Prices Paid by Farmers measures the average change in prices paid for commodities and services bought by farm families.

The index is made up of five major components. In terms of farm expenditures, the two most important components are the index of prices paid for commodities used in farm production and the index of prices paid for commodities used in family living. These two indexes comprise the Index of Prices Paid by Farmers for Goods and Services. The remaining three components of the Index are: (1) Interest charges per acre on mortgage indebtedness secured by farm real estate; (2) Taxes payable per acre on farm real estate; and (3) Wage rates paid to hired farm labor.

Two major indexes within the Prices Paid by Farmers Index are stratified further into 18 group indexes. The Farm Production Index is divided into 12 group indexes—feed, feeder livestock, seed, fertilizer, agricultural chemicals, fuels and energy, farm and motor supplies, autos and trucks, tractors and self-propelled machinery, other machinery, building and fencing materials, and farm services and cash rent. The Family Living Index is divided into six group indexes—food, clothing, housing, autos and auto supplies, medical and health, and education, recreation, and other.

As of June 15, 1976, the farm production component of the Index included 169 different commodity price series; the family living component 152 items—for a total of 321. Prices for 25 items are used in both family living and production indexes leaving a net of 296 separate price series. In the Family Living Index the medical and health and education, recreation, and other indexes are based on Consumer Price Indexes from the Bureau of Labor Statistics, and are excluded from the commodity price series count.

Price data used in the computation of the various indexes are collected largely by mail from independent and chain stores serving rural areas. Separate commodity price estimates are made for independent and for chain stores as of the 15th of the quarterly month. These separate price estimates are weighted together to obtain averages of prices paid by farmers for most family living and farm production items. In other months, prices are estimated only for chain stores which provide the basis for current index computations for the interquarterly months.

The U.S. commodity prices are computed by weighting State estimates of average prices by the estimated quantities of products purchased by farmers in each State. U.S. average prices are then combined into the group indexes, using as weights the estimated quantities of the individual commodities purchased by farmers based on a 1971–73 surveys of farmers' expenditures. Official data of the Agricultural Research Service and the Agricultural Marketing Service are also used to supplement the survey indications.

Group indexes are combined into their respective family living and production indexes, using percentage weights representing the estimated proportion of expenditures of farmers for each commodity group. These also were derived primarily from the 1971–73 Expenditure Surveys. The family living and production indexes are in turn combined into the all-commodity index of prices paid, using weights representing the proportionate expenditures for these two segments. In like manner, all commodities, interest, tax, and wage rate components are weighted, on the basis of relative expenditures, for the index of Prices Paid by Farmers.

DATA REFINEMENT

If certain components of the index of prices paid were needed to comprise a new index to reflect cost of production of cattle producers in the United States, the Statistical Reporting Service could provide such an index. Possible components to use in indicating cost of cattle production from the Index of Prices Paid are motor supplies, motor vehicles, farm machinery, farm supplies, building and fencing materials, interest per acre and wage rates. Weights could be derived from the 1975 Meat Animals Cost of Production Survey conducted by SRS for the Economic Research Service. Data from this survey are currently being summar-

ized by ERS and should be available for analysis by January 1, 1977. The new index could then be used in a combined index formula. One such formula would be to subtract the Prices Paid Index from a Beef Price Index. The resulting combined index multiplied by a base fee would result in the annual grazing fee. This, or some derivative, to determine an annual grazing fee, is possible to compute if such a formula were used.

BEEF CATTLE PRICE

Monthly, the Statistical Reporting Service publishes an all beef cattle price for all States and for the U.S. This price is comprised of a weighted average of (1) steer and heifer prices and (2) slaughter cow prices. An allowance, if necessary, is made for slaughter bulls. Data used in making these commodity estimates includes prices from market news sources, tabulated auction sales data and survey data from individual farmers.

State data are then weighted by historic beef cattle marketings, by month, for each State to establish the monthly beef cattle price for the U.S.

The Statistical Reporting Service can provide the annual average price for beef cattle and lambs for any grouping of States. Final State prices are weighted by marketing data. Groupings of 11 States and 15 States have been made available to Forest Service and BLM for many years, for administrative use only. Final annual average prices by States are published in the February issue of *Agricultural Prices*. The April issue contains U.S. averages.

VII. EVALUATION OF VARIOUS FEE FORMULAS

With a history of a market economy for all other products and resources used in agriculture, the obvious solution to the problem of pricing public grazing would be to open it up for competitive bidding. After all competitive bidding would extract the full fair market value of public range for the public coffers. It would allow all citizens to compete for the use of the resource, and at the same time keep our public ranges producing beef and mutton. In addition, resource use and product output would be at its marginal value product level, and the public good would almost certainly be served by the resultant competitive conditions.

However, a competitive bidding system would presume a relatively free and competitive market, a condition that does not exist for many users and potential users of public grazing on BLM and National Forests lands. Institutional goals, tenure arrangements, legislative requirements and management restrictions of the National Forest System and Taylor Grazing Districts effectively eliminate a competitive environment. The location of grazing allotments, property boundaries, terrain, and water development further reduce the competitive environment. It has been estimated that as much as twenty percent of BLM land is "captive" in that it would be difficult if not impossible for any other livestock operator to use certain public land tracts. Other lands are grazed in common by a number of livestock operators and should not be broken up into separate allotments.

Thus, the competitive bidding system appears infeasible as the necessary conditions for an operational system does not exist, less efficient administered pricing schemes must be considered. In each of these pricing methods the objective is to simulate the competitive bid by employing "proxi" variables derived from the competitive environment of the livestock industry.

It is the task of this Technical Committee to attempt to recommend the proper "proxi" for the competitive bid. Attention will be directed to the Index of Private Land Lease Rates and the Combined Index (BPI–PPI). The committee will also comment on the two tier fee system proposed in S. 3071.

INDEX OF PRIVATE LAND LEASED RATES

This method may be best described as the comparative market approach. It is based on the premise that an individual will not pay more for the use of a resource than his next best alternative, or conversely, the owner of a resource should receive a value equivalent to that which could be realized from the next best alternative use of that resource. Using this premise the public grazing fee should equal the private grazing rate, less the difference in the cost of using public range over private range. In the grazing fee formula, the absolute level is ignored and only the rate of change over time is used to update the base fee of $1.23 for 1966.

The use of the comparative market approach has considerable merit. First, its value is derived from the competitive environment. Second, it theoretically measures changes in efficiency of range resource use over time. Third, it should give a close estimation of the fair market value that would be obtained under a competitive bidding system. Thus, it would also fulfill the criteria of the "ideal" pricing system. Fourth, it reflects changes in the level of economic parameters such as the inflation rate, purchasing power of the dollar, and the value of farm real estate.

Critics of the Index of Private Land Lease Rate point out that land prices and net rents have a strong functional relationship. They argue that land prices on a per acre basis have increased six fold during the last 30 years, while net farm income per acre has shown no distinct trend during the same period. This behavior is hypothesised to be related to pressure for farm and ranch enlargement. Because land is a limiting resource an increasing portion of net farm income is being capitalized into the land resource. Active farmers and ranchers attribute near zero value to their labor, management, and some of their invested capital in order to pay for land, thus violating the equimartinal principal for resource valuation.

Another argument against the Index of Private Land Lease Rates is directed at the accuracy of the data. It is argued that the data represent non-livestock uses. Others point out that typical leases in the private sector are not negotiated on a head month basis, and that those responding to the survey question are not making proper transition from the actual existing lease to the head month lease basis.

The position of the Technical Committee is that the Index of Private Land Rates is a good indicator of long term adjustments taking place in western range livestock industry. It duplicates economic adjustments in the competitive sector, and is the only alternative suggested or discussed that incorporates measures of technical efficiency. Improvements made in the data collection process and discussed in the previous section should eliminate concern about the relevancy and accuracy of the data. However, the Technical Committee is concerned about the ability of the Index to reflect short-run instabilities that result during periods of disequilibrium. In the past the Index has failed to account for short-run adjustments in resource valuation.

COMBINED INDEX

This formula consists of the Index of Beef Prices and the Prices Paid Index. The formula was suggested by the American National Cattlemens Association (ANCA) and is usually referred to as the parity formula or the "ability to pay" formula. Several slightly differing versions have been offered but the Combined Index has been the nucleus of all of the proposals.

The goal of parity in the past was generally ridiculed by economists as not meaningful. But parity as defined in terms of equal resource returns should be close to their hearts after all the concept of "equal resource returns" is a primary condition defining the most efficient allocation of resources in the competitive market. When all factors are employed so that marginal returns to resources are equated within the industry and between agriculture and the nonfarm economy, maximum output of goods and services are obtained.

A second source of support for the combined index is related to economic stability. Returns to resources in the long-run have demonstrated an efficient agriculture and in particular beef cattle. However the cattle industry has shown a considerable degree of instability in the short-run return to resources. The instability results in windfall gains and losses to both the government and the ranchers alike.

Critics of the combined index insist that the formula is not directly measured in the competitive market, and consequently contains no measures of long run efficiency in resource use. It is based on the premise of constant purchasing power or constant relative income and does not allow for resource adjustment. A second part of the above argument is the cost of alternative or substitute inputs are not considered and thus it is not a fair proxi for the competitive market.

The formula has also been criticized for containing elements in the indices which are not used in western range live-

stock production (e.g. seed, fertilizer, and etc.). It was pointed out in the previous section on Data Sources that these elements could be deleted from the prices paid index and proper weights be reassigned from the cost of production study currently in progress by thhe Economic Research Service and the Statistical Reporting Service.

The third major criticism relates to the fact that the index does not respond to the inflation rate or the value of the purchasing power of the dollar. If the combined index were used as the only method of adjusting grazing fees, the public would receive a declining real rent in the long-run. In effect the rent that the rancher paid for the use of the resource would only be at "fair market value" in the base period.

The Technical Committee noted the shortcomings as well as the advantages of the combined index. The index was recognized as a poor indicator of long-run adjustments because of the behavioral nature of indices measuring differing sectors of the supply-demand model simultaneously. For this reason the committee rejected the use of the combined index as the sole adjustment factor in any grazing fee formula. However, the committee also recognized the inability of the index of private land lease rates to measure short-run instabilities particularly in an environment where the value of value of the resource (public grazing) is a derived demand from the product it produces (beef and lamb). Therefore the committee concluded that the range fee formula should include factors that measure changes in the value of the range resource in both the long-run and the short-run.

THE TWO TIER SYSTEM, S. 3071

A procedure requiring the establishment of two levels of grazing fees based on the number of acres required for one animal unit month has been proposed by the Public Land Council and was outlined in S. 3071.

The variable fee hypothesis suggests that the value of native rangelands for livestock grazing is directly related to only one element of the lands, the density of desirable vegetation. If rangelands had no other characteristics and ranching operations were all the same, this hypothesis might be a reasonable assumption. However, these Federal rangelands have many features and conditions, some constant and some changeable, that affect their economic value to the individual stockman. Forage quantity, as a component of grazing value, varies in terms of quality from place to place and from season to season. These variations do not directly change the relative dollar value of the grazing since availability and cost of alternative feed sources for each individual rancher also impact on the economic value of the native forage to the livestock producer.

As an example of conditions that do not support the variable fee argument consider: (1) Grazing capacity allowance for livestock may be reduced to accommodate wildlife and wild horse habitat needs and therefore would not relate directly to forage quality or land productivity. (2) Intraallotment differences in forage production and grazing conditions are just as variable as interallotment differences. (3) Livestock water may be the limiting factor on some rangelands and not forage quantity and (4) Winter ranges (usually of low productivity) may have greater economic value to the stockman than summer ranges (usually of higher productivity) because the alternative is to feed expensive hay.

In setting up the 1966 Western Wide Grazing Fee Study, there was then as now a strong belief by some that a vari- of one or more of the qualitative variables such as grazing capacity, season of use, geographic area, or vegetative type. One of the conclusions of the study was that there was no basis for recommending differential base fees among ranching areas.[6] An independent analyses by the BLM during 1967 identified that there are larger user-cost differences between ranchers within any categorical grouping than between the groups.[7] In essence, there was no statistical evidence in the study to support a variable fee. The Arthur D. Little Company, Inc., made an independent statistical analysis of the BLM and private grazing survey data. The results of this independent analysis supported the previous findings.[8]

The suggestion that an inequity is created when the same grazing fee is charged for grazing on high productivity land as for low productivity land is misleading because the unit of measurement for public land grazing is an animal unit month and not an acre of land. Also, there is no analysis available that the committee is aware of to support using 11 acres per AUM as the proper economic value point for dividing rangeland values for livestock grazing. The definition appears to be arbitrary and without foundation for establishing fees on public lands.

Under existing law and Executive policy a variable fee system is permitted but is not required unless specific inequities can be documented. Most of the questions and issues regarding grazing fees are related to managerial judgments and general economic factors more fundamental than public land user charges. Basically, the AUM and hence its general market value are the same from area to area since the grazing requirements of the animals are met and the yearly production cycle of the ranches are maintained. To recognize and differentiate public land grazing fees on the basis of detailed individual differences would require individual negotiation of fees with each of the 25,000 individuals using public lands.

[6] Housemen, Earl E., et al., "Special Report on Grazing Fee Study", USDA, Statistical Reporting Service, Oct. 24, 1968.

[7] Progress Report on Grazing Fee Study as of August 1, 1967, USDI, Bureau of Land Management.

[8] Arthur D. Little, Inc., "An Analysis of Western Livestock Grazing Costs, A Report to USDI," June 1967, Case No. 69463.

VIII. RECOMMENDATIONS

Establishing a grazing fee formula which is completely acceptable to the various management agencies and the users of Public Lands is a difficult task. It must accurately reflect the value of the resource and still take into account institutional restrictions and goals. Given the inability of economics as a discipline to aggregate individual utilities onto a single function, the next best alternative appears to be a "proxi" for the norm of economic efficiency. In the absence of a better criteria this value judgment will have to be acceptable.

Because a competitive environment does not exist, and can not exist given the current institutional constraints and goals, the members of the Technical Committee recommend the following formula as a proxi for the competitive market bid for grazing on an AUM basis:

$$FMV = A\left(\frac{L+P}{100}\right)$$

FMV=Fair Market Value for public grazing.

A=$1.23 base established from 1966 survey.

L*=Index of Private Land Lease Rates.

P**=Combined Index (BPI–PPI).

*The data for construction of this index should come from the probability based combined list frame sample described in Section V.

**BPI is a weighted index of average annual beef cattle prices less calves in the 11 Western States. PPI is an index of prices paid for inputs and would include only the seven items listed in Section V, and weighted by the Cost of Production Survey.

This formula is recommended as it provides for a consistent and efficient method of pricing the public grazing resources. The formula will reflect long-run trends in grazing values while at the same time accounting for short-run instabilities in either livestock prices or input prices. The committee has further recommended an improvement in the data collection procedures on the private land lease rates. Some modification was also suggested for the prices paid index to make it more accurately reflect western range livestock operation.

The Technical Committee has recommended the above grazing fee formula on its logical consistency. The data recommended for construction of the indices are not available for testing at this time. However it was assumed that the values for private land lease rates to be collected using the recommended improvements would be identical to the current data methods because the values will come from the same universe. Therefore the value of $3.65 from the base period of 1964–68 would continue to be the proper base for the index of private land lease rates.

It is further recommended that the mechanics of the formula be developed in detail by a work group staffed by members of the Forest Service and the Bureau of Land Management. The committee believes an upper limit of 25 percent could be imposed in the event of changes in economic conditions that

would force a sudden increase in grazing fees. Other mechanics are at the discretion of the management agencies.

TABLE 2.—*1969 fee system—Fair market value and fees actually charged*

[In dollars per AUM]

Year	Fair market value	National forest fees		BLM fee
		Average	High and low	
1966	1.23	0.51	1.64–0.19	0.33
1968		.56	1.80–.21	.33
1969	1.25	.60	1.25–.31	.44
1970	1.29	.60	1.25–.31	.44
1971	1.36	.78	1.36–.53	.64
1972	1.37	.80	1.37–.55	.66
1973	1.41	.91	1.41–.68	.78
1974	1.54	1.11	1.54–.92	1.00
1975	1.96	1.11	1.54–.92	1.00
1976	1.94	1.60	1.94–1.45	1.51

TABLE 3.—*Source of increase in fees*

[In dollars per AUM]

	National forests to		BLM to	
	1976	1980	1976	1980
1966 base value	0.51	0.51	0.33	0.33
Sum of incremental adjustments	[1].38	.72	[2].47	.90
Sum of adjustments by private grazing land lease rate index	.71		.71	
Total fee	1.60	1.23	1.51	1.23

[1] 4 at 0.072 plus 1 at 0.09 equal 0.38.
[2] 4 at 0.09 plus 1 at 0.11 equal 0.47.

[FR Doc.77-3310 Filed 2-3-77;8:45 am]